Claims

1   1.   A computer system enabling user directed information research against an

2   authoritatively organized document collection, said computer system comprising:

3   a) a database storing first data identifying a set of authoritative statements

4   present within the documents of said predetermined authoritative document

5   collection, second data specifying the locations of the authoritative assertions of

6   said set of authoritative assertions within the documents of said predetermined

7   authoritative document collection, third data specifying correlated associations

8   between the authoritative assertions of said set of authoritative assertions within

9   the documents of said predetermined authoritative document collection; and

10   b) a processor, coupleable to said database, operative to generate a mesh

11   representational view of the correlated associations between the authoritative

12   assertions of said set of authoritative assertions and wherein said processor is

13   responsive to user input for navigation through said mesh representational view

14   and user determined selection of a subset of said set of authoritative assertions.

1   2.   The computer system of Claim 1 wherein said third data defines relative

2   distance weighted, directional associations between the authoritative assertions

3   of said set of authoritative assertions within the documents of said predetermined

4   authoritative document collection.

1   3.   The computer system of Claim 2 wherein the authoritative assertions of

2   said set of authoritative assertions are representable as nodes within said mesh

3   representational view and wherein said third data determines the relative

4   interconnection of said nodes within said mesh representational view.

1   4.   The computer system of Claim 3 wherein said database further stores

2   fourth data identifying authoritative citations in correspondence with the

3   authoritative assertions of said set of authoritative assertions, wherein selection of

4   said subset includes selection of the corresponding authoritative citations, said

5   processor being further operative to generate a literate report of said subset of

6   said set of authoritative assertions and corresponding authoritative citations.

1   5.   The computer system of Claim 4 wherein generation of said literate report

2   includes syntactic processing of said subset of said set of authoritative assertions.

1   6.   The computer system of Claim 5 wherein generation of said literate report

2   includes reformation of said corresponding authoritative citations dependent on

3   the order of occurrence of said corresponding authoritative citations within said

4   literate report.

1   7.   The computer system of Claim 6 wherein generation of said literate report

2   includes maintenance of predetermined report content provided in response to

3   user input relative to said subset of said set of authoritative assertions and

4   corresponding inclusion of said predetermined report content in said literate

5   report.

1   8.   The computer system of Claim 7 wherein said processor is operative to

2   maintain source versions of said subset of said set of authoritative assertions, said

3   corresponding authoritative citations, and said predetermined report content for

4   reference in connection with the syntactic processing of said subset of said set of

5   authoritative assertions, including said predetermined report content, and the

6   reformation of said corresponding authoritative citations.

1   9.   A method of performing information research against an authoritatively

2   organized document collection, wherein the method is supported by a computer-

3   implemented framework operating against a computer accessible database

4   representation of the authoritatively organized document collection, said method

5   comprising the steps of:

6   identifying, in response to user input, a selected authoritative assertion

7   occurring within a selected document of a predetermined document collection

8   containing authoritatively organized information;

9   associating a plurality authoritative assertions, which occur within the

10   documents of said predetermined document collection, with said selected

11   authoritative assertion based on weighted relationships derived from the relative

12   mutual occurrence of said selected and plurality of authoritative assertions within

13   the documents of said predetermined document collection;

14   generating a representational view of said plurality of authoritative

15   assertions organized to reflect said weighted relationships, wherein said

16   representational view enables user directed navigation over said plurality of said

17   authoritative assertions;

18   selecting, in connection with said user directed navigation, a subset of said
19   plurality of authoritative assertions, wherein the authoritative assertions of said
20   subset are provided in a determined order; and

21   preparing a literate report incorporating said subset in said determined
22   order.

1   10.   The method of Claim 9 wherein said step of preparing provides for the
2   syntactic processing of said subset to improve the literate presentation of the
3   authoritative assertions of said subset in said determined order.

1   11.   The method of Claim 10 wherein authoritative citations exist in
2   correspondence with the authoritative assertions, wherein said step of preparing
3   includes incorporating a predetermined set of authoritative citations,
4   corresponding to the authoritative assertions of said subset, into said literate
5   report.

1   12.   The method of Claim 11 wherein said step of preparing further provides
2   for the reformation processing of said predetermined set of authoritative citations
3   to improve the literate presentation of said predetermined set of authoritative
4   citations in said literate report relative to said determined order.

1   13.   The method of Claim 9 wherein said step of associating a plurality
2   authoritative assertions includes the steps of:
3   a) determining a first authoritative citation associated with a first
4   authoritative assertion; and

5   b) locating a second authoritative assertion that is referenced by said first

6   authoritative citation and semantically correlated with said first authoritative

7   assertion.

1   14.   The method of Claim 13 wherein said step of locating said second

2   authoritative assertion includes the step of comparing a semantic similarity metric

3   computed for said first authoritative assertion with semantic similarity metrics

4   computed for each of the authoritative assertions referenced by said first

5   authoritative citation to distinguish said second authoritative assertion.

1   15.   The method of Claim 13 wherein said step of locating said second

2   authoritative assertion includes the step of comparing a semantic similarity metric

3   computed with respect to said first authoritative citation with semantic similarity

4   metrics computed for each of the authoritative assertions referenced by said first

5   authoritative citation to distinguish said second authoritative assertion.

1   16.   The method of Claim 9 wherein said step of generating said

2   representational view includes the steps of:

3   a) first determining as said weighted relationships a set of relative distance

4   weighted, directional associations describing the mutual associativity of the

5   authoritative assertions within said plurality of authoritative assertions; and

6   b) second determining an attributed representation of said set of relative

7   distance weighted, directional associations as a mesh interconnecting nodes

8   representing said plurality of authoritative assertions as said representational view.

1   17.   The method of Claim 16 wherein authoritative assertions have

2   corresponding authoritative citations and wherein said step of first determining

3   provides said set of relative distance weighted, directional associations relative to

4   authoritative assertions having different corresponding authoritative citations.

1   18.   The method of Claim 17 wherein said step of first determining further

2   provides said set of relative distance weighted, directional associations relative to

3   authoritative assertions having the same corresponding authoritative citations.

1   19.   The method of Claim 18 wherein said step of second determining

2   selectively provides said mesh based on said set of relative distance weighted,

3   directional associations relative to authoritative assertions having different

4   corresponding authoritative citations and relative to authoritative assertions having

5   the same corresponding authoritative citations.

1   20.   A computer system providing a framework for information research over

2   an authoritatively organized document collection containing authoritative

3   statements including authoritative assertions coupled with authoritative citations,

4   said computer system comprising:

5   a) a computer database storing reference data derived from said document

6   collection associating the mutual relative occurrence of said authoritative

7   assertions occurring within the documents of said document collection, said

8   reference data further associating first authoritative assertions through first

9   authoritative citations to second authoritative assertions, wherein said second

10 authoritative assertions are disambiguated relative to said first authoritative

11 citations by a predetermined metric of semantic similarity; and

12   b) a processor coupleable to said computer database implementing a first

13 framework module operable to display a representation of said reference data,

14 a second framework module operable to enable user selection of a research set

15 of authoritative assertions, and a third framework module operable to generate

16 a report of said research set of authoritative assertions.

1   21.   The computer system of Claim 20 wherein said reference data includes

2   weight values reflecting the mutual relative distance of occurrence of said

3   authoritative assertions occurring within the documents of said document

4   collection and wherein said weight values determine the default ordering of said

5   authoritative assertions in said research set.

1   22.   The computer system of Claim 21 wherein said weight values further reflect

2   a cluster association of a predetermined authoritative assertion relative to a

3   predetermined authoritative citation.

1   23.   The computer system of Claim 22 wherein said representation produced

2   by said first framework module is a mesh representation of a selected subset of

3   said reference data and wherein said selected subset is determined by user

4   directed navigation of said mesh representation.

1 24.   The computer system of Claim 23 wherein user selection of said research

2 set is determined in conjunction with user directed navigation of said mesh

3 representation.

1 25.   The computer system of Claim 24 wherein said third framework module

2 is operative to grammatically process said research set of authoritative assertions

3 to provide said report as a literate report.

1 26.   A computer-based system for developing a compilation of authoritative

2 knowledge, said computer-based system comprising:

3   a) a first database of authoritative knowledge including a plurality of

4 authoritative statements;

5   b) a second database of weight values interrelating said plurality of

6 authoritative statements;

7   c) a viewer, coupled to said first and second databases, enabling

8 presentation of a subset of said plurality of authoritative statements including a set

9 of identified authoritative statements and a set of supplemental authoritative

10 statements, wherein said set of supplemental authoritative statements is selected

11 based on associations determined from said second database of weight values

12 and relative to said set of identified authoritative statements;

13   d) first controls, coupled to said viewer, operative to influence the selection

14 of said set of supplemental authoritative statements; and

15   e) second controls, coupled to said viewer, operative to produce a report

16 of said set of identified authoritative statements.

1 27. The computer-based system of Claim 26 wherein said first controls are

2 operative to include authoritative statements of said set of supplemental

3 authoritative statements in said set of identified authoritative statements.

1 28. The computer-based system of Claim 27 further comprising a parser

2 operative on said report to initially determine said set of identified authoritative

3 statements.

1 29. The computer-based system of Claim 28 wherein said report is a literate

2 report of said set of identified authoritative statements.

1 30. An apparatus for processing a document collection to enable authoritative

2 information research, said apparatus comprising:

3   a) a database that provides for the storage of data with respect to a set of

4 authoritative assertions occurring within the documents of a predetermined

5 document collection; and

6   b) a processor coupleable to access the documents of said predetermined

7 document collection and further coupleable to store first and second data to said

8 database, said processor being operative to generate first data identifying said set

9 of authoritative assertions, said first data further identifying the locations of said

10 set of authoritative assertions within the documents of a predetermined document

11 collection, said processor being further operative to generate second data

12 containing a weighted correlation of the mutual relative occurrence of the

13 authoritative assertions of said set of authoritative assertions within the documents

14   of said predetermined document collection, and wherein said processor provides

15   for the storage of said first and second data in said database,

16   whereby said first and second data provides an authoritatively related

17   basis for analyzing the documents of said predetermined document collection.

1   31.   The apparatus of Claim 30 wherein said second data further contains

2   weighted correlations representing semantic similarity of the authoritative

3   assertions of said set of authoritative assertions.

1   32.   The apparatus of Claim 31 wherein said first and second data defines a

2   weighted correlation mesh interrelating the authoritative assertions of said set of

3   authoritative assertions.

1   33.   The apparatus of Claim 32 wherein said weighted correlations include

2   directional information reflecting the ordered of occurrence of the authoritative

3   assertions of said set of authoritative assertions within the documents of said

4   predetermined document collection such that said first and second data defines

5   a directionally weighted correlation mesh

6   whereby said first and second data provides a directed basis for analyzing

7   the ordered occurrence of conceptual issues represented by sequences of

8   authoritative assertions occurring within said set of authoritative assertions.

1   34.   The apparatus of Claim 33 wherein said second data, as generated by

2   said processor, correlates first and second predetermined authoritative assertions

3   by a weighted ordered distance metric derived by analysis of the mutual relative

4 locations of said first and second predetermined authoritative assertions within

5 documents of co-occurrence of said predetermined document collection.

1 35.   The apparatus of Claim 34 wherein said processor, in generating said

2 second data, computes a semantic affinity metric for the authoritative assertions

3 of said set of authoritative assertion as a basis for establishing conceptual content

4 associations between the authoritative assertions of said set of authoritative

5 assertions.

1 36.   The apparatus of Claim 35 wherein said second data, as generated by

2 said processor, includes cluster association information for the authoritative

3 assertions of said set of authoritative assertions, wherein said cluster association

4 information is determined based on said semantic affinity metric as computed for

5 each of the authoritative assertions within said set of authoritative assertions.

1 37.   A method of preparing a document collection research database to support

2 information analysis and reporting, said method comprising the steps of:

3   a) processing the documents of a predetermined authoritative document

4 collection to locate authoritative assertions;

5   b) determining weighted correlations of the mutual occurrence of

6 authoritative assertions in the documents of said predetermined document

7 collection; and

8   c) storing reference data to a research database including references to

9 said located authoritative assertions and said weighted correlations, wherein said

10 weighted correlations are stored in a defined correspondence with said located

11 authoritative assertions,

12   whereby the weighted correlations between authoritative assertions provide

13 an associative basis for analyzing the informational content of said predetermined

14 authoritative document collection.

1 38.   The method of Claim 37 wherein said weighted correlations reflect the

2 ordered occurrence of mutually associated authoritative assertions within the

3 documents of said predetermined document collection.

1 39.   The method of Claim 38 wherein first authoritative assertions are coupled

2 with authoritative citations and wherein said weighted correlations reflects the

3 association of said first authoritative assertions by reference through authoritative

4 citations to second authoritative assertions.

1 40.   The method of Claim 39 further comprising the step of identifying, for a

2 predetermined first authoritative assertion, a predetermined said second

3 authoritative assertion based on said authoritative citation coupled with said

4 predetermined first authoritative assertion and a semantic affinity metric computed

5 for said predetermined first and second authoritative assertions.

1 41.   The method of Claim 40 wherein said weighted correlations reflects the

2 affinity of the said authoritative assertions to semantically affine clusters of

3 authoritative assertions, the weighted ordered distance between authoritative

4   assertions within a first predetermined limit, and the semantic affinity and ordered

5   distance between said clusters within a second predetermined limit.

1   42.   A method of disambiguating authoritative citations establishing references

2   to documents within an authoritative document collection to support a process of

3   authoritative information analysis, wherein said method is autonomously

4   performed by a computer system having access to the documents of said

5   authoritative document collection, said method comprising the steps of:

6   a) identifying, within a first document of a document collection, a first

7   authoritative assertion associated with a first authoritative citation;

8   b) determining, within a second document of said document collection

9   specified by said first authoritative citation, a set of authoritative assertions; and

10   c) selecting a second authoritative assertion from said set of authoritative

11   assertions based on a semantic similarity metric computed for said first

12   authoritative assertion and each authoritative assertion of said set of authoritative

13   assertions, said second authoritative assertion having a greater semantic

14   correlation to said first authoritative assertion.

1   43.   The method of Claim 42 further comprising the step of constructing a

2   reference database storing data representative of the association of said first and

3   second authoritative assertions.